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A35420-PCT-USA (070050.2708)
PATENT

REMARKS

Summary of Office Action

Claims 1-10 are pending. Claims 1-10 have been rejected under 35 U.S.C. § 103(a) as being obvious from Johnson, D. L., and M. E. Q. Pilson, "Spectrophotometric Determination of Arsenite, Arsenate, and Phosphate in Natural Waters," *Analytica Chimica Acta*, 58, p. 289-299, 1972 ("Johnson and Pilson") in view of what the Examiner alleges is well-known in the art. The Office Action indicates that the Examiner takes Official Notice of several facts from his personal knowledge.

Claim 1 has been objected to because alleged confusion between the terms in the preamble and the body of the claim. Further, the drawings have been objected to as not showing the "optical probes" recited in the claims.

Applicant's Reply

Applicant respectfully traverses the objection to the drawings, the objection to the claim 1, and the prior art rejections of the claims 1-10.

Objection to the Drawings

Applicant notes that FIGS. 1a and 1b show the claimed optical probes, which comprise light sources (e.g., 120A and 120B), and detector(s) (e.g., 130A and 130B), etc. As such, the claims and figures conform to all requirements of 37 C.F.R. § 1.83 (a). Applicants respectfully request withdrawal of the objection to the drawings.

Objection to Claim 1

The Office Action states that usage of terms "a test water" in the preamble and body of the claim 1 is confusing. However, claim 1 does not use the term "a test water." Applicant believes that the Examiner's objection may concern a related application (No.

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11/006,254), and will address it there. (If this is incorrect, the undersigned will appreciate a telephone call to quickly resolve this issue).

Prior art rejections

Applicant has amended claim 1 for clarity. Applicant respectfully submits that the Examiner has incorrectly rejected claims 1-10 without establishing a prima facie case of obviousness under 35 U.S.C. 103(a).

At several instances in the Office Action, the Examiner alleges that the claims are obvious from Johnson and Pilson in view of "what is known in the art." (See e.g., Office Action, Section 4-9. However, in each instance, the Examiner does not state or identify what it is that is "well known in the art". Thus, the Examiner has not provided sufficient information for applicant to rebut the allegations. Applicant traverses each instance of the well known statement in the Office Action, and requests that the Examiner identify and substantiate each "well known" allegation.

Applicant's invention is directed toward analytical chemistries and techniques for the reliable field detection of trace levels of arsenic in well water. Detection of such trace levels of arsenic was hereto not feasible with prior art chemistries (including Johnson and Pilson) and even with complex laboratory equipment.

Applicant notes that the appropriate quantitative chemical analysis technique (and corresponding sample preparation technique) for determining the concentration of a particular chemical species is a function of the concentration range (e.g., integer %, ppm, or ppb) and a function of the sample conditions (e.g., presence of other interfering species or noise).

Both the Johnson and Pilson method and the claimed inventive method rely on the so-called "molybdate blue" techniques to determine arsenic concentration. However, both

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methods address different problems, and use different sample preparation chemistries and measurement techniques.

The Johnson and Pilson sample preparation chemistries are designed specifically for sea water. In such waters, the total concentration of arsenic and phosphates is less than about 3 μ M. The concentration of the arsenic and phosphates is comparable. (See e.g., Johnson and Pilson, page 298: Summary paragraph). Arsenic concentrations are determined by comparing oxidized and "untreated" samples. (See e.g., pp. 292-293). Further, the Johnson and Pilson method is designed for use with laboratory or complex spectrophotometers and not for field use.

Applicant's method addresses a different problem: Ground water in which phosphates levels are an order of magnitude higher than sea water, the arsenic levels lower, and further in which the arsenic levels of concern fall in the noise levels of all but the most sophisticated laboratory equipment. Arsenic concentrations are determined by comparing "unreduced" and "reduced" samples. Applicant's sample preparation technique involves oxidation only as an option. (See e.g., claim 2, and specification page 9, lines 18-19). Further, applicant's method is designed for accurate measurements in third world conditions (e.g., at locations where utility electric power is not available).

Thus, the prior art (including Johnson and Pilson) and applicant address two different problems, which have two different solutions. There is nothing in the prior art (despite Examiner's allegation of what is well-known) that leads to the sample preparation chemistries and measurement techniques invented and claimed by applicant.

Applicant submits that the hindsight is not valid reason to reject applicant's claims. Accordingly applicant respectfully request withdrawal of the rejections of claims 1-10.

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Conclusion

Applicant respectfully submits that this application is now in condition for allowance. Reconsideration and prompt allowance of which are requested. If there are any remaining issues to be resolved, the applicants request that the Examiner contact the undersigned attorney for a telephone interview.

Respectfully submitted,

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